

JC07 Rec'd PCT/PTO 07 DEC 2001

FORM PTO-1390) (REV. 9-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 912.40950X00 filed December 7, 2001	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	
				10/009296	
INTERNATIONAL APPLICATION NO. PCT/GB00/02147		INTERNATIONAL FILING DATE June 2, 2000		PRIORITY DATE CLAIMED June 7, 1999	
TITLE OF INVENTION APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES					
APPLICANT(S) FOR DO/EO/US BAILEY, THOMAS WILLIAM TAYLOR, ROBERT HOWARD					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input type="checkbox"/> is transmitted hereto (required only if not communicated by the International Bureau).</p> <p>b. <input checked="" type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office(RO/US)</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input checked="" type="checkbox"/> is attached hereto.</p> <p>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11 to 20 below concern document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input checked="" type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input checked="" type="checkbox"/> Other items or information: SEE ATTACHMENT</p>					

U.S. APPLICATION NO. (If known, see 37 CFR 1.53) 107 009296				INTERNATIONAL APPLICATION NO. PCT/GB00/02147		ATTORNEY'S DOCKET NUMBER 912.40950X00	
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21. The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a) (1) - (5)): <input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....\$1040.00 <input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.....\$890.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$740.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4).....\$710.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4).....\$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =					CALCULATIONS PTO USE ONLY		
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).					\$0.00		
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$0.00			
Total Claims	24- 20 =	4	x \$18.00	\$72.00			
Independent Claims	2- 3 =	0	x \$84.00	\$0.00			
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			+ \$280.00	\$0.00			
TOTAL OF ABOVE CALCULATIONS =				\$962.00			
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$0.00			
SUBTOTAL =				\$962.00			
Processing fee of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$0.00			
TOTAL NATIONAL FEE =				\$962.00			
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$0.00			
TOTAL FEES ENCLOSED =				\$962.00			
				Amount to be refunded: \$			
				charged: \$			

a. ☐ A check in the amount of \$_____ to cover the fees is enclosed.

b. ☐ Please charge my Deposit Account No. **01-2135** in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **01-2135**. A duplicate copy of this sheet is enclosed.

d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Antonelli, Terry, Stout & Kraus, LLP
 1300 North Seventeenth Street
 Suite 1800
 Arlington, VA 22209
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SIGNATURE
 Melvin Kraus
 NAME
 22,466
 REGISTRATION NO.

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FORM PTO-1390) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE (REV.11-2000)		ATTORNEY'S DOCKET NUMBER 912.40950X00 filed December 7, 2001
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371 (ADDENDUM)		U.S. APPLICATION NO. (If known, see 37 CFR 1.5)
INTERNATIONAL APPLICATION NO. PCT/GB00/02147	INTERNATIONAL FILING DATE June 2, 2000	PRIORITY DATE CLAIMED June 7, 1999
TITLE OF INVENTION APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES		
APPLICANT(S) FOR DO/EO/US BAILEY, THOMAS WILLIAM TAYLOR, ROBERT HOWARD		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
PCT REQUEST FORM INTERNATIONAL PUBLICATION NO. WO 00/75017 INTERNATIONAL PRELIMINARY EXAMINATION REPORT INTERNATIONAL SEARCH REPORT w/ CITED REFS. CREDIT CARD PAYMENT FORM FIGS. 1-8		

912.40950X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Thomas William BAILEY, et al.
Application No.: Not yet Assigned
Filing Date: December 7, 2001
Title: APPARATUS AND METHOD FOR WRAPPING ARTICLES,
PARTICULARLY GROUPS OF CIGARETTES

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

December 7, 2001

Sir:

Prior to examination, please amend the above-identified application as follows.

IN THE CLAIMS:

Please cancel claims 25 – 26 and amend claims 3, 5, 8, 10, 12 -13, 16 – 20 and 23 to read as follows:

3. (Amended) Apparatus as claimed in claim 1, wherein the heat sealing means comprises a series of heater means, at least one heater means being associated with each of said locations.

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5. (Amended) Apparatus as claimed in claim 3, including means for moving said respective heater means into and out of operative positions at said locations.

8. (Amended) Apparatus as claimed in claim 6, wherein said carrier is annular and supports said heater means in radially outer or radially inner positions relative to said locations.

10. (Amended) Apparatus as claimed in claim 6, wherein said carrier supports said heater means in axially adjacent positions relative to said locations.

12. (Amended) Apparatus as claimed in claim 5, wherein said locations are disposed so as to present respective faces of articles at inclined orientations, and said heater means are provided with correspondingly inclined faces, so as to facilitate displacement of said heater means relative to said articles by said moving means.

13. (Amended) Apparatus as claimed in claim 1, wherein the heat sealing means comprises a series of end seal heaters, each of which includes an actuatable element movable into and out of an operative position with respective location.

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16. (Amended) Apparatus as claimed in claim 13, wherein the actuable element is movable in a plane which is transverse to an axis of the rotary conveyor.

17. (Amended) Apparatus as claimed in claim 13, wherein the actuable element is movable in a plane which is generally parallel to an axis of the rotary conveyor.

18. (Amended) Apparatus as claimed in claim 1, including means for delivering successive articles to said rotary conveyor at said first rotational position in a direction substantially parallel to an axis of said rotary conveyor.

19. (Amended) Apparatus as claimed in claim 1, including means for delivering successive articles to said rotary conveyor at said first rotational position in a direction substantially transverse to an axis of said rotary conveyor.

20. (Amended) Apparatus as claimed in claim 18, including means for transferring wrapped articles from said rotary conveyor towards further rotary conveyor means in a direction parallel to the direction of conveyance of said delivering means.

23. (Amended) A method as claimed in claim 21, including the step of forming at least one end seal on said path.

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IN THE ABSTRACT:

Please add the following Abstract:

--In a wrapping apparatus, particularly for enclosing articles consisting of or containing groups of cigarettes in wrapper material, the articles are received in a pocketed drum in which at least one overlapped region of the wrapper material is heat sealed. Preferably opposed side seams and an end flap of the wrapper are sealed, so as substantially to complete the enclosure of the article while on the drum. Side seal heaters carried by the drum may be mounted on respective annular carriers which are rotatably displaceable to remove the heaters from contact with the articles if the drum is stopped for an extended period. End seal heaters may be pivotally mounted on the drum and operated by a cam arrangement to fold an end flap of the wrapper into an overlapped position.--

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REMARKS

Attached hereto is a marked-up version of the changes made to the claims by the current preliminary amendment. The attached page is captioned **“Version with markings to show changes made.”**

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of this paper, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (500.35359X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Melvin Kraus, Registration No. 22,466

MK:cas
(703) 312-6600

Attachment

3. (Amended) Apparatus as claimed in claim 1 ~~or claim 2~~, wherein the heat sealing means comprises a series of heater means, at least one heater means being associated with each of said locations.

8. (Amended) Apparatus as claimed in claim 6 ~~or claim 7~~, wherein said carrier is annular and supports said heater means in radially outer or radially inner positions relative to said locations.

12. (Amended) Apparatus as claimed in ~~any of claims~~ claim 5 to 11, wherein said locations are disposed so as to present respective faces of articles at inclined orientations, and said heater means are provided with correspondingly inclined faces, so as to facilitate displacement of said heater means relative to said articles by said moving means.

19. (Amended) Apparatus as claimed in ~~any preceding~~ claim 1, including means for delivering successive articles to said rotary conveyor at said first rotational position in a direction substantially transverse to an axis of said rotary conveyor.

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20. (Amended) Apparatus as claimed in claim 18 ~~or~~ 19, including means for transferring wrapped articles from said rotary conveyor towards further rotary conveyor means in a direction parallel to the direction of conveyance of said delivering means.

23. (Amended) A method as claimed in claim 21 ~~or~~ 22, including the step of forming at least one end seal on said path.

APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES

This invention relates to a wrapping apparatus and method, particularly but not exclusively for wrapping articles including or containing groups of rod-like articles of the tobacco industry such as cigarettes or cigarette filter rods.

Cigarette packs, particularly those comprising a hinged lid pack, are commonly wrapped in heat sealable transparent plastics wrapper material, which assists in protecting the packet and maintaining freshness of its contents. So-called soft packs have a wrapper material, often including a metal layer or a metalised plastics laminate, which is sealed around a group of cigarettes. WO98/22367 and WO98/22368 disclose a cigarette pack in which wrapper material comprising a sealed barrier layer, which may comprise a metalised plastics laminate, is formed around a group of cigarettes partly surrounded by an inner frame. The present invention is particularly but not exclusively useful in connection with wrapping articles including or containing groups of cigarettes in the production of packs in any of these styles.

According to one aspect of the invention, apparatus for wrapping articles, particularly articles consisting of or containing groups of rod-like articles, comprises a rotary conveyor provided with a series of locations each of which is arranged to receive at a first rotational position of the conveyor an article and a wrapper at least partly surrounding the article and having at least one overlapped region, and heat sealing means carried with the conveyor and arranged to heat seal said overlapped region before discharge of the article and wrapper at a second rotational position of the conveyor.

According to another aspect of the invention, a method of wrapping articles, particularly articles consisting of or containing groups of rod-like articles, comprises the steps of conveying an article and a wrapper at least partly surrounding the article on a rotary path, and forming at least one heat seal at an overlapped region of the wrapper on said path. In a preferred arrangement, wherein said overlapped region includes spaced regions for forming side seals, the method includes the step of forming side seals on substantially opposite sides of said article substantially simultaneously on said path. At least one end

seal may be formed on said path, and the method may include the step of folding an end flap into an overlapped position on said path prior to forming said at least one end seal.

As mentioned, the apparatus and method of the invention may be used in the wrapping of cigarette groups in wrapper material, eg to wrap cigarette packs, or in the production of soft packs or packs of the type disclosed in said WO97/42097 or WO97/42098. However, it will be appreciated that the invention is applicable to wrapping other articles, particularly those articles each having generally the shape of a right parallelepiped, irrespective of its constituents or contents.

Although it is preferred that the material of the wrapper is itself heat-sealable, the invention is applicable also to materials to which an adhesive which can be set or dried by heat has been applied at appropriate places in relation to the overlapped region to be sealed.

The invention will be further described, by way of example only, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a perspective schematic view of a cigarette packing machine,
Figure 2 is a view showing product feed through the machine of Figure

1,

Figure 3 is an end view of a sealing drum of the machine of Figure 1,
Figure 4 is an enlarged view of a detail of the sealing drum shown in Figure 3,

Figure 5 is a view in the direction of arrow V in Figure 4,

Figure 6 is an end view of an alternative sealing drum usable in a machine similar to that of Figure 1,

Figure 7 is a view in the direction of arrow VII in Figure 6, and

Figure 8 is a sectional view on the line VIII-VIII in Figure 6.

Referring to Figures 1 and 2, a machine for producing hinged lid packets containing wrapped cigarette groups, which may be in the form of resealable inner packs such as disclosed in said WO98/22367 or WO98/22368, includes a cigarette hopper 10, which delivers cigarettes downwards to a group forming region or regions in which groups 12 of cigarettes are formed and subsequently

plunged into individual pockets of a collation conveyor belt 14. The groups 12 are received in each pocket on an inner frame 16 delivered to the belt 14 at a position upstream of the hopper 10 and cut from an inner frame reel 18. Presence and condition of cigarettes in each group 12 are checked by ends
5 detectors 20 alongside the belt 14.

Each cigarette group 12, together with its folded inner frame 16, is pushed from the pocket on belt 14 along a linear conveyor path 22 on which it intercepts a wrapper section 24 at a plunge position 26, such that the cigarette group 12 and inner frame 16 become partially enveloped in the wrapper section
10 (ie the wrapper section forms a U around its leading end).

Each wrapper section 24 is a composite panel comprising an inner foil section, delivered from a reel 28, and an outer label section, delivered from a reel 30. The foil and label webs are delivered in overlying relationship to a cutting unit 32, which severs leading ends of the webs to form successive
15 composite wrapper sections 24. Alternatively each wrapper section 24 may be obtained from a single reel, consisting of a foil web having pre-applied labels. As a further option, the wrapper sections 24 may be foil sections obtained from a single reel, each section being defined by perforations or pre-formed score lines across the web of the reel.

20 Downstream of the plunge position 26, wrapping and folding of the wrapper section 24 around the group 12 and inner frame 16 is partially completed in conventional manner, eg using plough and tuck folders as used on hinged lid packing machines manufactured by the applicants, to form a partially-completed pack 34. The form of the pack 34 is shown in Figure 5. Tack heater
25 bands 36 may be provided to temporarily hold the side flaps in place before the pack 34 is delivered to a pocketed sealing drum 38 at which heat sealing of the overlapped edges of the wrapper section 24 is completed. The material of each wrapper section 24 is heat-sealable. As an alternative, where the material is not heat-sealable, adhesive could be applied upstream of the bands 36.

30 After heat sealing has been completed in the sealing drum 38, the pack 34 is delivered to a blank folding turret 40, at which it is received in a pocket 42 in which a hinged lid blank 44 has already been received from a blank feed and

gumming unit 46. The blank 44 is folded and sealed around the pack 34 in the turret 40. Delivery of completed packets 48 is by way of a linear conveyor 50 to a drying drum 52 at which the adhesive of the folded blank 44 is cured and/or dried so that finished packets may be delivered along an exit conveyor line 54.

5 It will be understood that movement of each of the pocketed conveyors 14, 38, 40, and 52 is generally intermittent and in steps corresponding to the pitch between adjacent respective pockets, so that at least transfer to or from the respective conveyor normally occurs while the conveyor is stationary, although in principle the machine may operate continuously.

10 The machine may readily be adapted to produce packs 34, ie without an
outer hinged lid packet, by omission of the turret 40.

Figures 3-5 show more details of the sealing drum 38. This comprises a central hub 60 from which extend in a generally radial direction a series of profiled projections 62 (only three of which are shown in Figure 3) which at least partially define between them the pockets 64 in which the packs 34 are held. Rotatable about the same axis as the hub 60 is an inner ring 66 carrying a series of circumferentially-spaced inner heater elements 68, and also an outer ring 70 carrying a series of circumferentially-spaced outer heater elements 72. In normal operation the hub 60 and rings 66 and 70 rotate intermittently together, with the heater elements 68 and 72 aligned with the pockets 64 so as to provide heat to seal the side seams of the packs 34. This is the position shown in Figure 3. Note that the side faces of the projections 62 are not radial but are inclined at relatively small angles to a radial direction, so that packs 34 held in the pockets 64 are correspondingly inclined, as are the operating faces of the heater elements 68 and 72. When the machine is stopped, eg because of a malfunction, the inner and outer rings 66, 70 can be rotated relative to the central hub 60 by an amount sufficient to withdraw the respective heater elements 68, 72 from the faces of the packs 34 held in the pockets 64: this avoids overheating by prolonged contact between the packs and the heater elements. This displacement of the heater elements 68, 72 by relative rotation, which as shown in Figure 3 consists of anti-clockwise movement of the inner

ring 66 and clockwise rotation of the outer ring 70, is facilitated by the inclined orientation of the pockets 64 and corresponding faces of the heater elements.

The heater elements 68 and 72 complete side sealing of the longitudinal seams of the packs 34. End sealing, which is required only at the trailing end of
5 each pack 34, is also carried out on the drum 38.

Associated with each pocket 64 and carried by the central hub 60 is a series of pivoted levers 74 (only one of which is shown in Figure 3) each carrying at its outer end a heater element 76 and at its inner end a cam lever and roller 78 which is engaged in a stationary cam track 80. As best seen in Figures 4 and 5, the heater element 76 is aligned with the end of the pack 34 and is movable under operation of the cam roller 78 and cam track 80 from its position shown in the drawings to the position indicated at 76A in Figure 5 at which an end flap 34A of the pack 34 is held and sealed against the main body of the pack. Note that the movement of the element 76 into its sealing position performs the operation of folding the end flap 34A. The heater element 76 is maintained in position against the pack for sufficient time to effect the seal, the cam track 80 being arranged so that subsequently the lever 74 is returned to the position shown in Figures 3 and 4 at least prior to the respective pockets 64 receiving a new pack 34. Means (not shown) may be provided for returning the lever 74 to its inoperative position (ie with the heater element 76 out of contact with the pack 34) if the machine stops for an extended period (so as to prevent overheating).

The orientation of the pack 34 in the pockets 64 corresponds with the orientation of the drum 38 as shown in Figures 1 and 2. Figures 6-8 illustrate an alternative drum 138 in which the axis of the drum is disposed at right angles to that of the drum 38 (ie the drum 138 is orientated in a plane parallel to that of the drum 52). In the drum 138 pockets 164 are defined and carried by a central drum assembly 160. Heater elements 168, 172, which engage with respective side seams of the packs 34 in the pockets 164, are carried by respective discs 167, 171 which are coaxial and rotatable with the hub assembly 160 and disposed adjacent the opposite end faces of the assembly. The discs 167, 171 can be rotated relative to the assembly 160 to displace the heater elements 168.

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Claims

1. Apparatus for wrapping articles, particularly articles consisting of or containing groups of rod-like articles, comprising a rotary conveyor provided with a series of locations each of which is arranged to receive at a first rotational position of the conveyor an article and a wrapper at least partly surrounding the article and having at least one overlapped region, and heat sealing means carried with the conveyor and arranged to heat seal said overlapped region before discharge of the article and wrapper at a second rotational position of the conveyor.

2. Apparatus as claimed in claim 1, wherein the rotary conveyor comprises a pocketed drum.

15 3. Apparatus as claimed in claim 1 or claim 2, wherein the heat sealing means comprises a series of heater means, at least one heater means being associated with each of said locations.

4. Apparatus as claimed in claim 3, including series of first and second opposed heater means associated with each location for heat sealing overlapped regions on opposite sides of an article at said location.

5. Apparatus as claimed in claim 3 or claim 4, including means for moving said respective heater means into and out of operative positions at said locations.

6. Apparatus as claimed in claim 5, including at least one series of heater means mounted on a carrier, said moving means comprising means for displacing said carrier relative to said locations.

7. Apparatus as claimed in claim 6, wherein said displacing means comprises means for rotationally displacing said carrier relative to an axis of said rotary conveyor.

5 8. Apparatus as claimed in claim 6 or claim 7, wherein said carrier is annular and supports said heater means in radially outer or radially inner positions relative to said locations.

10 9. Apparatus as claimed in claim 8, wherein said carrier supports a series of first heater means in a radially outer position, including a further annular carrier supporting a series of second heater means in a radially inner position.

15 10. Apparatus as claimed in claim 6 or claim 7, wherein said carrier supports said heater means in axially adjacent positions relative to said locations.

20 11. Apparatus as claimed in claim 10, wherein said carrier supports a series of first heater means in an axially adjacent position on one side of said locations, including a further carrier supporting a series of second heater means in an axially adjacent position on the other side of said locations.

25 12. Apparatus as claimed in any of claims 5 to 11, wherein said locations are disposed so as to present respective faces of articles at inclined orientations, and said heater means are provided with correspondingly inclined faces, so as to facilitate displacement of said heater means relative to said articles by said moving means.

30 13. Apparatus as claimed in any preceding claim, wherein the heat sealing means comprises a series of end seal heaters, each of which includes an actuatable element movable into and out of an operative position with a respective location.

14. Apparatus as claimed in claim 13, wherein the actuatable element is arranged to complete a folding action on a wrapper of an article in said respective location on movement into said operative position.

5 15. Apparatus as claimed in claim 14, wherein the actuatable element includes a pivoted lever operated by cam means on rotation of said rotary conveyor.

10 16. Apparatus as claimed in any of claims 13 to 15, wherein the actuatable element is movable in a plane which is transverse to an axis of the rotary conveyor.

15 17. Apparatus as claimed in any of claims 13 to 15, wherein the actuatable element is movable in a plane which is generally parallel to an axis of the rotary conveyor.

20 18. Apparatus as claimed in any preceding claim, including means for delivering successive articles to said rotary conveyor at said first rotational position in a direction substantially parallel to an axis of said rotary conveyor.

19. Apparatus as claimed in any preceding claim, including means for delivering successive articles to said rotary conveyor at said first rotational position in a direction substantially transverse to an axis of said rotary conveyor.

25 20. Apparatus as claimed in claim 18 or 19, including means for transferring wrapped articles from said rotary conveyor towards further rotary conveyor means in a direction parallel to the direction of conveyance of said delivering means.

30 21. A method of wrapping articles, particularly articles consisting of or containing groups of rod-like articles, comprising the steps of conveying an article and wrapper at least partly surrounding the article on a rotary path,

and forming at least one heat seal at an overlapped region of the wrapper on said path.

5 22. A method as claimed in claim 21, wherein said region includes spaced regions for forming side seals, including the step of forming side seals on substantially opposite sides of said article substantially simultaneously on said path.

10 23. A method as claimed in claim 21 or 22, including the step of forming at least one end seal on said path.

 24. A method as claimed in claim 23, including the step of folding an end flap into an overlapped position on said path prior to forming said at least one end seal.

15 25. Apparatus for wrapping articles, substantially as herein described with reference to Figures 1-5 or Figures 6-8 of the accompanying drawings.

20 26. A method of wrapping articles, substantially as herein described with particular reference to Figures 1-5 or Figures 6-8 of the accompanying drawings.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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51/16

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(74) Agents: **SMITH, Norman, Ian et al.**; fJ Cleveland, 40-43 Chancery Lane, London WC2A 1JQ (GB).

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9913223.5 **7 June 1999 (07.06.1999)** **GB**

(71) Applicant (*for all designated States except US*): **MOLINS PLC** [GB/GB]; 11 Tanners Drive, Blakelands, Milton Keynes MK14 5LU (GB).

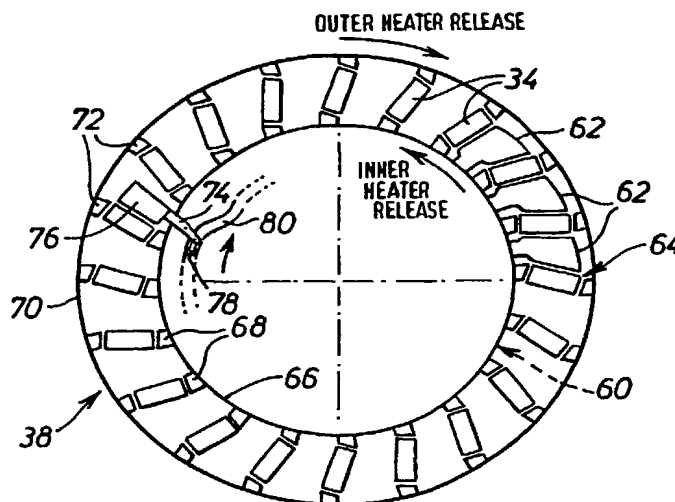
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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BAILEY, Thomas,**

(54) Title: **APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES**



(57) Abstract: In wrapping apparatus, particularly for enclosing articles consisting of or containing groups of cigarettes in wrapper material, the articles (34) are received in a pocketed drum (38) in which at least one overlapped region of the wrapper material is heat sealed. Preferably opposed side seams and an end flap of the wrapper are sealed, so as substantially to complete the enclosure of the article while on the drum. Side seal heaters (68, 72) carried by the drum (38) may be mounted on respective annular carriers (66, 70) which are rotatably displaceable to remove the heaters from contact with the articles (34) if the drum is stopped for an extended period. End seal heaters (76) may be pivotally mounted on the drum (68) and operated by cam means (78, 80) to fold an end flap of the wrapper into an overlapped position.

WO 00/75017 A1

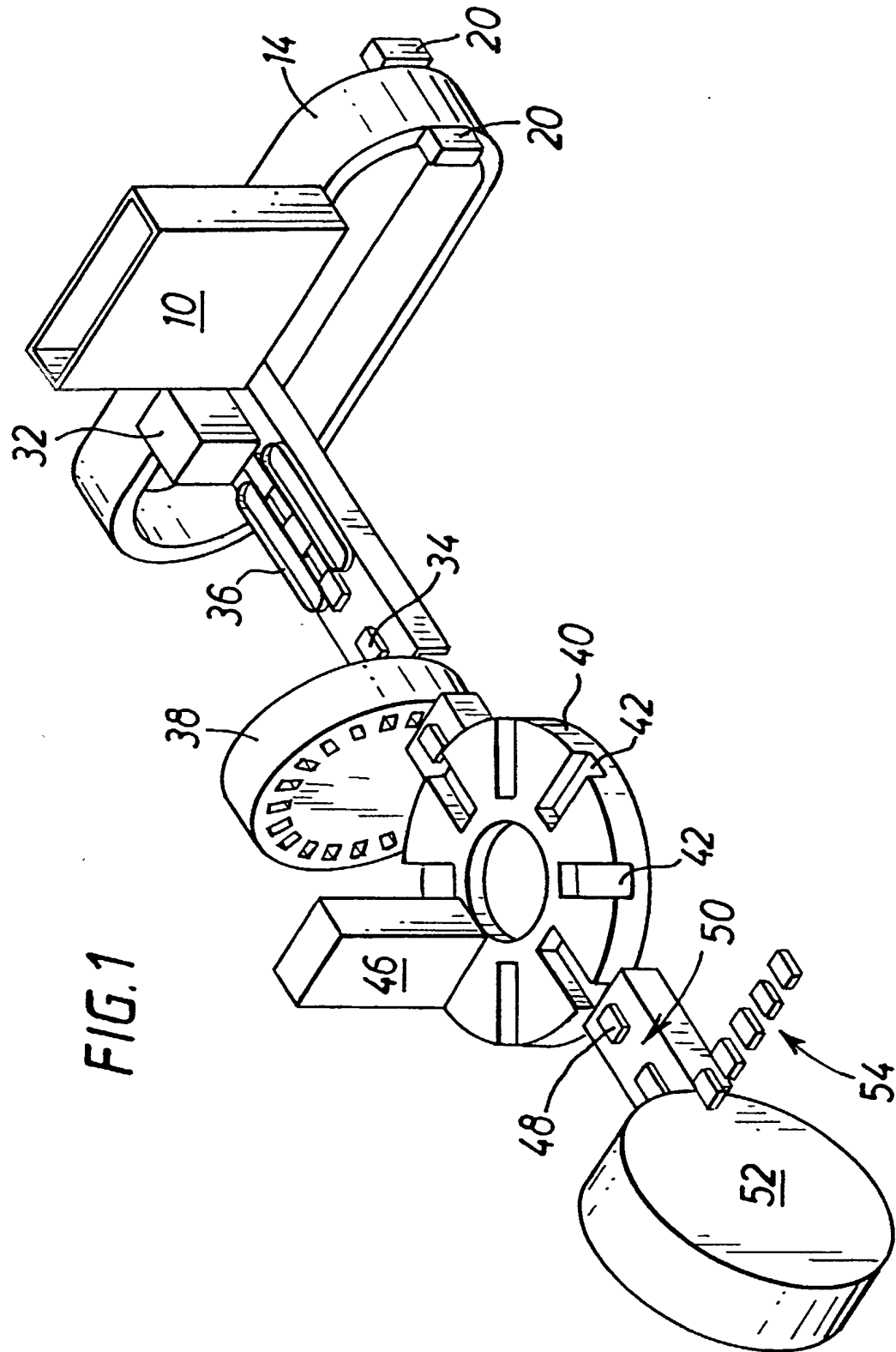
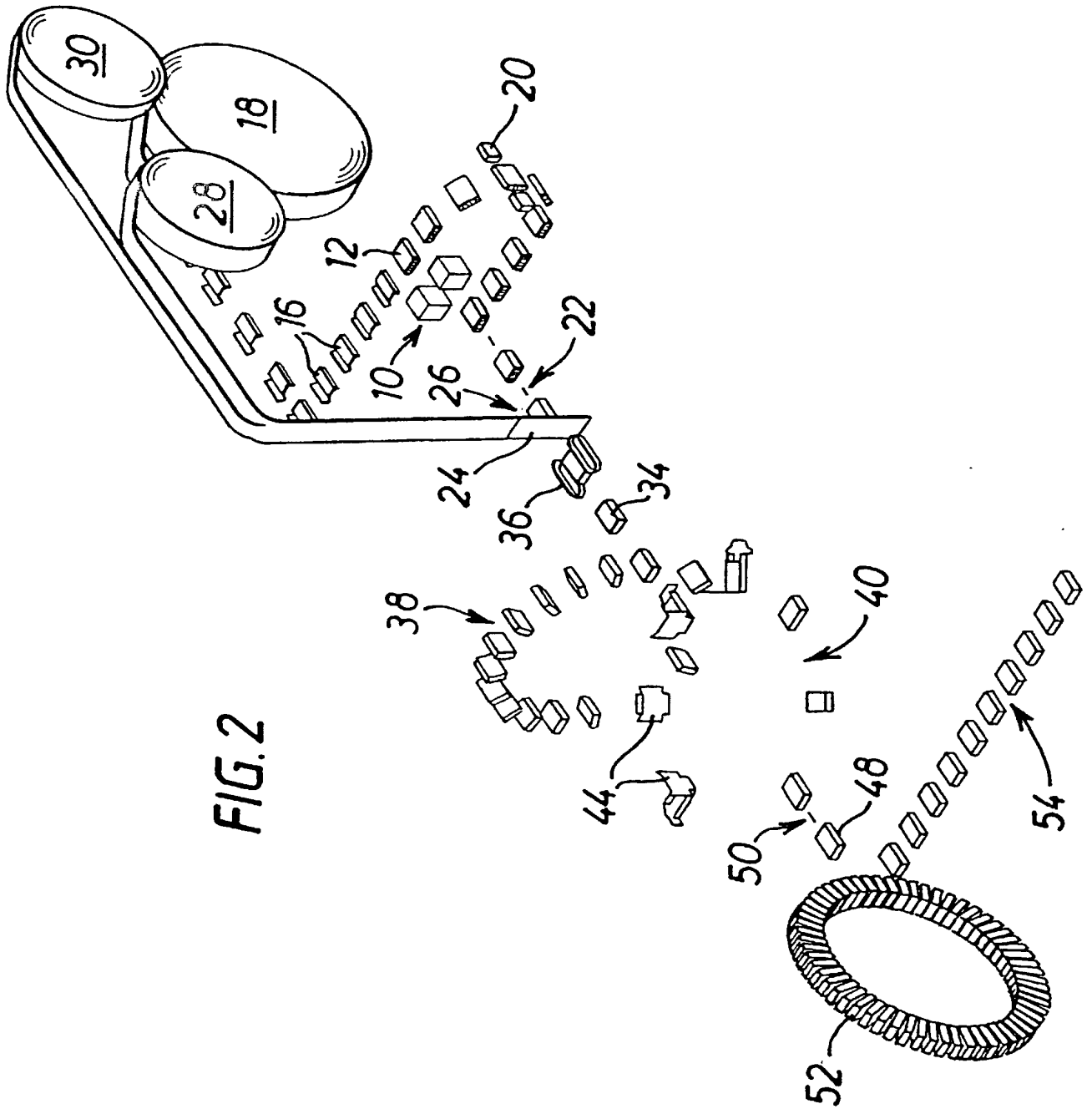
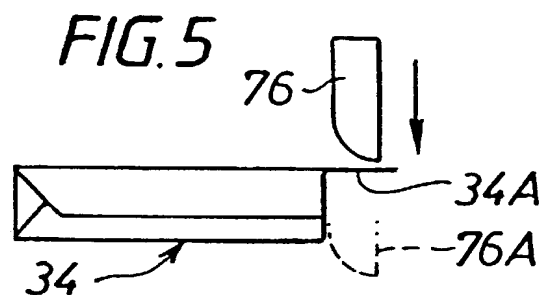
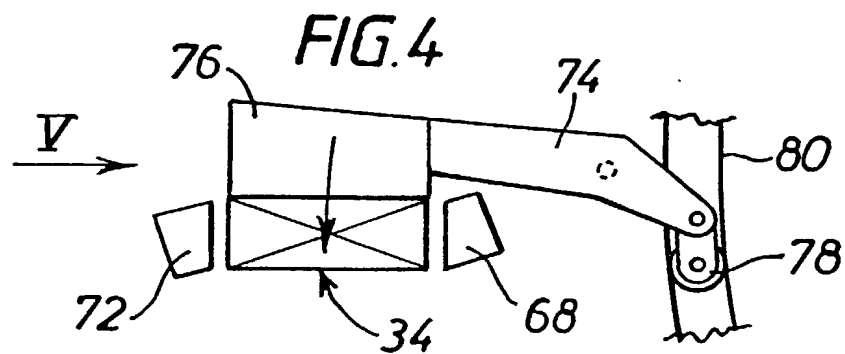
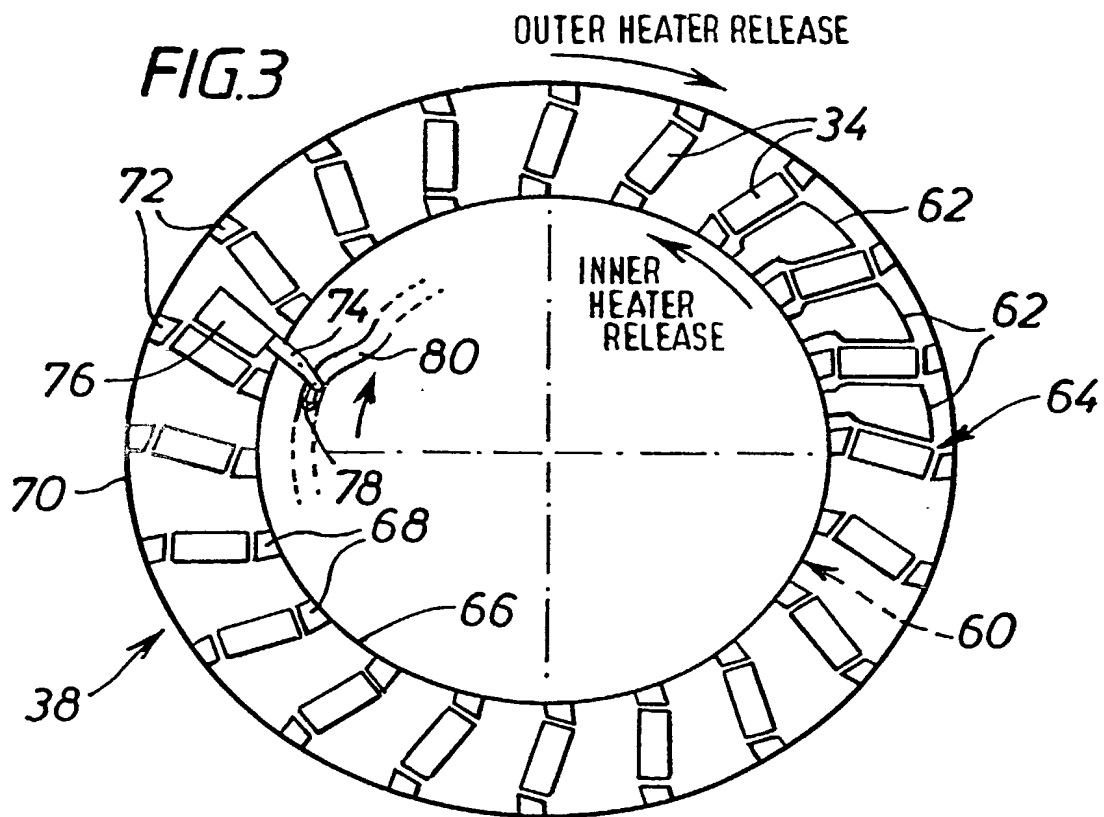
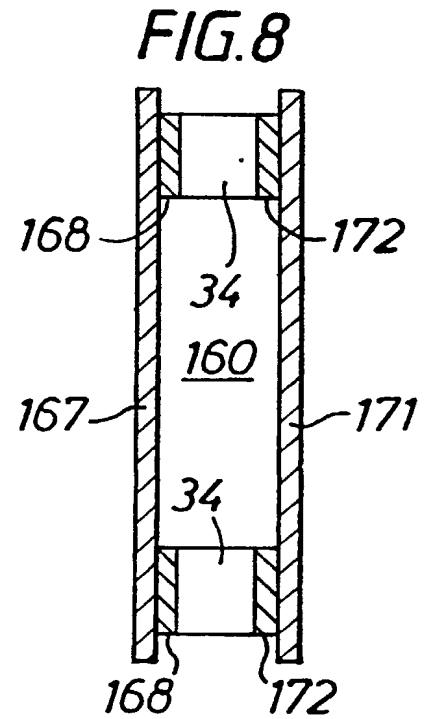
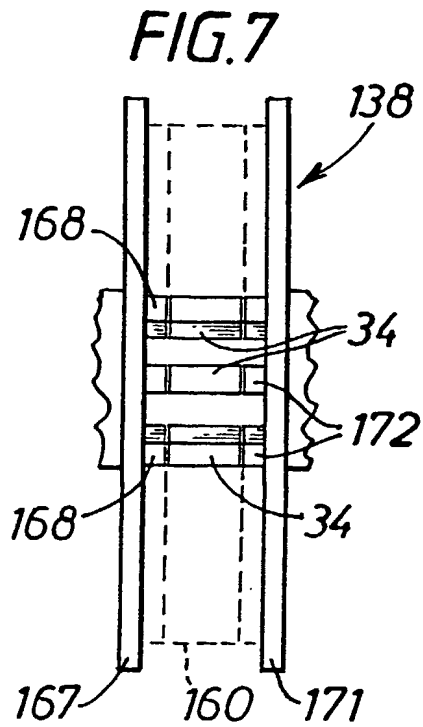
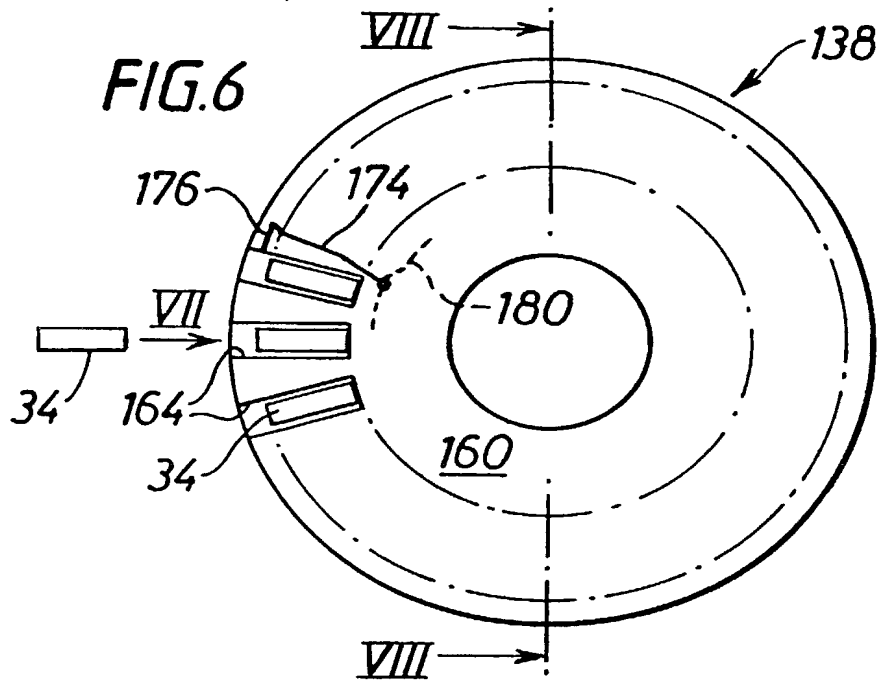


FIG. 2









10079296 040302

#6

Attorney's Docket No.: 912.40950X00

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that: my residence, post office address and country of citizenship are as stated below, next to my name; I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES

the specification of which

is attached hereto.

X was filed on June 2, 2000 as
United States Application Number _____
or PCT International Application Number PCT/GB00/02147
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)**Priority
Claimed**

<u>9913223.5</u> (Number)	<u>United Kingdom</u> (Country)	<u>June 7, 1999</u> (Day/Month/Year Filed)	<u>X</u> Yes	<u> </u> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<u> </u> Yes	<u> </u> No

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

_____ (Application Number)	_____ Filing Date
_____ (Application Number)	_____ Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Inventor's Signature [Signature] Date [Signature]
Residence 13 Westwood Way, Westwood Business Park, Conventry CV4 8HS Citizenship United Kingdom
(City, State) (Country)
Post Office Address Same as above



10009296 1040302#6

Attorney's Docket No.: 912.40950X00**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that: my residence, post office address and country of citizenship are as stated below, next to my name; I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

APPARATUS AND METHOD FOR WRAPPING ARTICLES, PARTICULARLY GROUPS OF CIGARETTES

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is attached hereto.

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I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

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_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<u>Yes</u>	<u>No</u>

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_____ (Application Number)	_____ Filing Date
_____ (Application Number)	_____ Filing Date

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PCT/GB00/02147
(Application Number)

02 June 2000
Filing Date

Pending
(Status -- patented,
pending, abandoned)

(Application Number)

Filing Date

(Status -- patented,
pending, abandoned)

I hereby appoint: Donald R. Antonelli, Reg. No. 20,296; Melvin Kraus, Reg. No. 22,466; William I. Solomon, Reg. No. 28,565; Gregory E. Montone, Reg. No. 28,141; Ronald J. Shore, Reg. No. 28,577; Donald E. Stout, Reg. No. 26,422; Alan E. Schiavelli, Reg. No. 32,087; James N. Dresser, Reg. No. 22,973; Carl I. Brundidge, Reg. No. 29,621; Paul J. Skwierawski, Reg. No. 32,173; Robert M. Bauer, Reg. No. 34,487; and Hung H. Bui, Reg. No. 40,415, my attorneys; of ANTONELLI, TERRY, STOUT & KRAUS, LLP with offices located at 1300 North Seventeenth Street, Suite 1800, Arlington, Virginia 22209, telephone: (703) 312-6600, fax: (703) 312-6666; with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send all correspondence to:

CUSTOMER NUMBER: 020457
ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 North Seventeenth Street
Suite 1800
Arlington, VA. 22209

Direct all telephone calls and faxes to:

TEL: (703) 312-6600
FAX: (703) 312-6666

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Solicitor/First Inventor Thomas William Bailey

Inventor's Signature X Date X
Residence 13 Westwood Way, Westwood Business Park, Coventry CVR 8HS Citizenship United Kingdom
(City, State) (Country)

Post Office Address Same as above

2-00

Full Name of Second/Joint Inventor Robert Howard Taylor

Inventor's Signature X Date 15/03/02
Residence 13 Westwood Way, Westwood Business Park, Coventry CV4 8HS Citizenship United Kingdom
(City, State) (Country)

Post Office Address Same as above

Title 37, Code of Federal Regulations, Section 1.56
Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by 991.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe a pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;
- or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
 - (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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